

Here are my thoughts on the workshop:

- 1) The workshop helped to clarify the motivation for attempting to construct a magnetized dusty plasma device: First of all, we made clear our intention to produce a device in which the dust particles are magnetized, i.e., the magnetic field can be raised to a sufficient magnitude so that the gyroradius of the particles is much less than the transverse dimension of the device. The main reason for doing this is to investigate (uncover) the fundamental plasma physics of a dusty plasma in which the electrons, ions and dust are successively magnetized as the magnetic field is increased. We also produced a list of some of the disciplines, i.e., space and astrophysics, in which a knowledge of the behavior of a magnetized dusty plasma is required in order to understand the complex phenomena that is occurring.

- 2) The physical nature of the device was clarified. The possibility of adding extensions to the main central chamber will allow for experiments in which we have a roughly 40 cm long dusty plasma with a relatively uniform magnetic field along the axis.

- 3) We came to a consensus on the plasma source -- an rf parallel plate source.

- 4) The possible dust sizes that could be used were narrowed down to something less than 1 micron and possible as small as 100 nm. Although the smaller dust cannot be imaged in the usual way, methods exist to diagnose the behavior of the small particles. Small particles also has the advantage that they would completely fill up the vacuum vessel, producing an extended, magnetized dusty plasma.

- 5) We agreed that observation of the EDC mode would be one of the initial experiments. Observation of the EDC mode is direct evidence for the presence of magnetized dust. This experiment can be done with the smaller particles since optical detection is not necessary. The EDC mode can be detected by monitoring the discharge current which should contain low frequency fluctuations near the dust cyclotron frequency.